

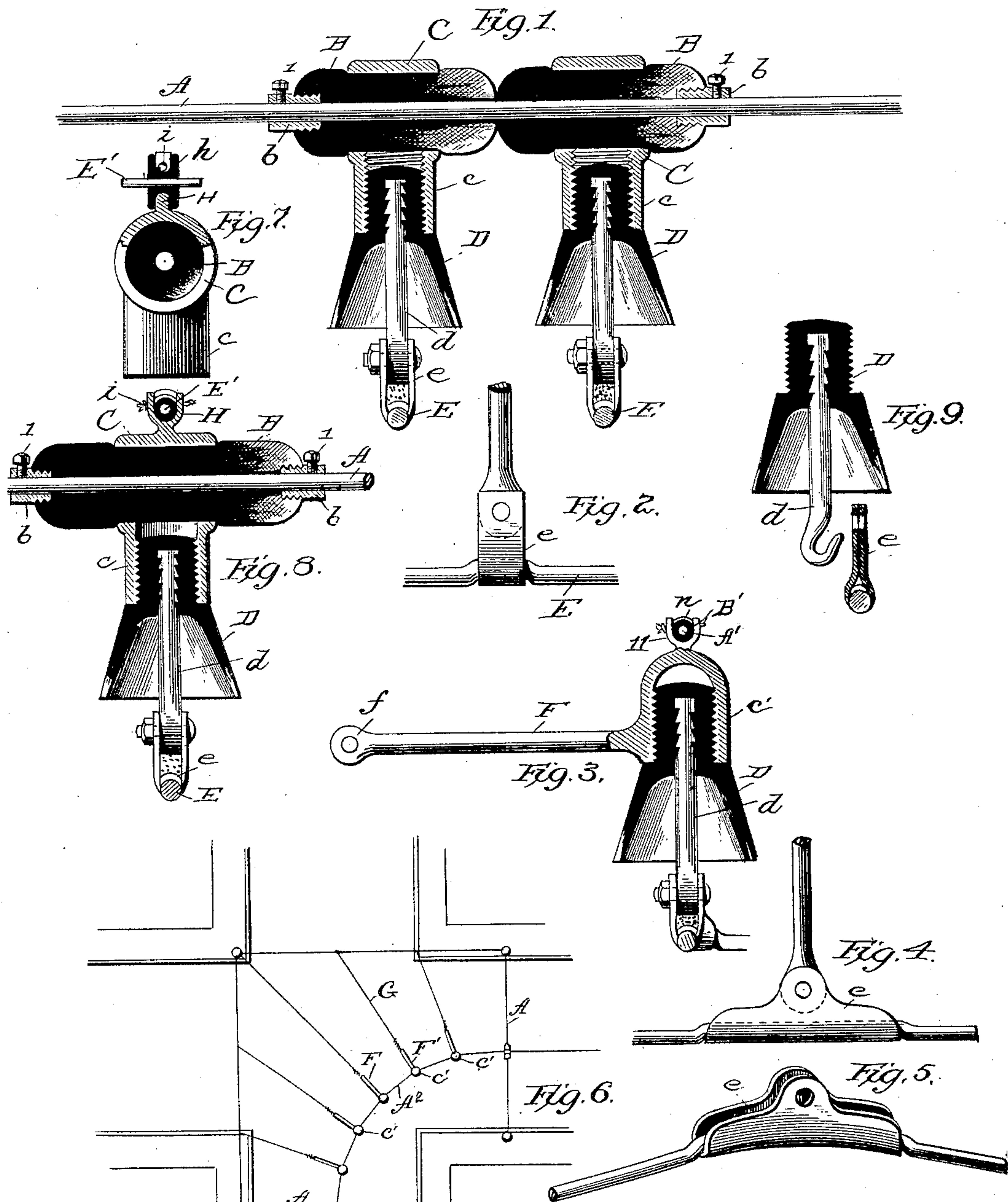
(No Model.)

S. H. SHORT.

INSULATING SUPPORT FOR ELECTRIC CONDUCTORS.

No. 398,661.

Patented Feb. 26, 1889.



Attest
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UNITED STATES PATENT OFFICE.

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INSULATING-SUPPORT FOR ELECTRIC CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 398,661, dated February 26, 1889.

Application filed November 6, 1888. Serial No. 290,117. (No model.)

To all whom it may concern:

Be it known that I, SIDNEY H. SHORT, of Columbus, in the county of Franklin and State of Ohio, have invented a new and useful Improvement in Insulating-Supports for Electric Conductors; and I do hereby declare that the following is a full, clear, and exact description of the same.

The invention set forth in the following specification relates to the supporting and insulation of electrical conductors, more particularly such as are used for electric railways.

It includes details of construction, all of which are hereinafter fully set forth, and are illustrated in the accompanying drawings, in which—

Figure 1 shows a vertical section; Fig. 2, a side elevation of the conductor and its direct support; Fig. 3, a vertical section of the insulating-support for curves; Figs. 4 and 5, a side elevation and perspective of details of Fig. 3; Fig. 6, a plan view of a curve in the road; Figs. 7, 8, and 9, details of modifications.

In the figures, A represents the supporting-wire—such, for example, as that ordinarily stretched across from one pole to another over the track of electric railways. On this wire is placed a block, B, of some suitable insulating material, bored longitudinally to receive the wire A, and having screwed into the end a thimble, b, provided with a set-screw, l, by means of which the block is held adjustably on the wire. Embracing the block is a sleeve, C, which has a tubular extension, c, projecting downward, the sleeve being rigidly secured to the block. The sleeve and its extension are of metal, and the extension is threaded to receive the insulator D, the threaded shank of which is screwed into the tubular extension. The insulator has a metal shank, d, projecting down in the bell-shaped mouth of the insulator. The upper end of the shank is secured into the insulator, preferably by embedding it in the process of forming the insulator. The lower end has an eye, in which is secured, by means of a bolt and nut, a clip, e, in which the conducting-wire E is placed. The clip is of flattened strap metal, and the conducting-wire is formed with a slight offset, the depth of which equals the thickness of the strap metal, and the wire is placed in

the clip, as shown in Fig. 2, with the lower surface of the strap flush with the under side of the wire, and in this position it is soldered, so that the parts are held against longitudinal movement. Manifestly the clips may be soldered in place, and the wire may then be raised and bolted to the eyes of the shanks; but instead of the eyes and bolts I may have on the lower end of the shank a hook, and the clip formed with a hole in its upper end adapted to fit over the hook, all as shown in Fig. 9.

The construction above described is adapted to straight portions of the road. For curves upon the road I have devised supports shown in Fig. 3. In this the part corresponding to the tubular extension c is here marked c', the supporting-wire A', a substitute for the sleeve consisting of the parts n and 11, and insulation marked B'. The sleeve c' is provided with a rigid arm, F, the end of which is formed with an eye, f, to receive the lateral wires, by means of which it is held to any suitable support by the roadside. The same form of insulator is used with this extension c'.

In Fig. 6 I have shown in plan view these supports in place. In this A² represents the curve of the conducting-wire, the arms F being shown in position, with supporting-wires G extending from the eyes of the arms substantially radial to the center of the curve, these supports being in place at regular intervals and arranged in the manner described. The wire may be supported about the curve by strain applied to one side only. In order to prevent short kinks or turns in the conducting-wire at the immediate point of support, the clips are elongated, as shown in Fig. 4, and are bent laterally, as shown in Fig. 5, to correspond to the general curve of the wire.

In order to avoid accident arising from the dropping of other wires which may happen to cross above the conducting-wire E, I provide a guard-wire, E'. To support this, a pronged standard, H, is formed upon or fixed to the upper side of the sleeve C, Figs. 7 and 8. In these prongs, as a convenient mode of connection, I place a porcelain button, h, formed with a peripheral groove adapted to fit snugly between the prongs, in which it is held by a bit of wire, i, passing through holes in the

ends of the prongs and through the upper part of the groove of the button. The wire E' passes through an axial hole in the center of the button. This wire is designed as a guard-wire, but may be used as a stay-wire, if desired.

I have described only one sleeve C on the conducting-wire; but it will be observed that two are shown in Fig. 1 of the drawings. These are exact duplicates of each other, and may be adjusted in relation to each other so that the two conducting-wires may be placed at any relative distance asunder, as may be required.

I claim as my invention—

1. In combination with a supporting-wire, a tubular extension supported thereon through an adjustable insulating-block, and the insulator fixed in the tubular extension having a shank, *d*, provided with a clip supporting the conducting-wire, substantially as described.

2. In combination with the shank and its clip, the conducting-wire formed with an offset fitted to the clip, substantially as described.

3. The conducting-wire formed with an offset, and the clip fitted thereto and provided

with a hole in its upper end for connection with the shank, substantially as described.

4. In combination, a supporting-wire, a tubular extension supported thereby, the conducting-wire and means for suspending it from the tubular extension, an arm, F, extending laterally, and a stay-wire, G, substantially as described.

5. In combination, the supporting-wire and the elongated curved clip, combined with the wire having an offset, and means of attachment between the said clip and the supporting-wire, substantially as described.

6. In combination with the conducting-wire, the guard-wire E', supported upon the insulating-block B, substantially as described.

7. The prongs on the sleeve C, combined with the button and wire and with the guard-wire E', all substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SIDNEY H. SHORT.

Witnesses:

F. L. MIDDLETON,
WALTER DONALDSON.